

Application No. 10/737032
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Amendment
Attorney Docket No. A39.2B-10296-US01

Amendments To The Specification:

On page 5, line 15, please add the following paragraph:

Figure 2 is a block diagram of a portion of the invention.

On page 5, line 16, please add the following paragraph:

Figure 3 is a block diagram of a portion of the invention.

Please replace the paragraph starting on page 5, line 27, with the following paragraph:

For the present invention, the weapon may be a smooth bore projectile 42, which is launched from a smooth bore barrel 40 and is equipped with a spin inducing mechanism, such as a plurality of which canted fins 50, as schematically shown in the block diagram of Figure 3. which The plurality of canted fins are positioned so as to induce spin upon the introduction of air flow when the weapon is projected into the air stream. This spin reduces dispersion. The use of canted fins is well known in the art. This spin is generally about two to three times the aerodynamic resonance of the projectile and typically in the tens of hertz, whereas twist bore induced spin is in the thousands of hertz.

Please replace the paragraph starting on page 6, line 26, with the following paragraph:

The second environment sensor 24 measures the rate of spin of the weapon and uses the information from the timing control 22 to determine whether the second environment has been achieved, that is whether the projectile has achieved a certain spin rate or has achieved a certain spin rate within a certain time window. If the second environment is achieved, a positive or high signal is sent along line 30 to AND gate 18, which outputs to the safety and arming block 20. The spin rate sensor 24 is operatively engaged to a primer ignition mechanism 100. The primer ignition mechanism 100 ignites an electrically actuated primer 102 when the spin rate

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sensor 24 detects the second condition.

Please insert the following paragraph between the paragraphs starting on page 6, line 26, and on page 6, line 32:

As schematically shown in the block diagram of Figure 2, the spin rate sensor 24 includes a counting mechanism 30 for counting each said rotation of the smooth bore projectile as it rotates around its longitudinal axis. The counting mechanism 30 includes a spin signal mechanism 32 for generating a spin signal 34 which varies over time as the smooth bore projectile rotates about its axis in the earth's magnetic field. The spin signal may be a sine wave and the crossings of the x axis by the sine wave are used to determine frequency, which is used to determine spin rate. Preferably, the second condition is a spin rate of about 100 Hertz or less. The magnitude of the spin signal reaches a predetermined threshold a predetermined number of times for each said rotation of the smooth bore projectile. The counting mechanism 30 also includes a counter 36 operatively connected to the spin signal mechanism 32 for counting the number of times the spin signal 34 reaches its predetermined threshold. The spin rate sensor 24 further includes a spin rate computation mechanism 38 for determining a spin rate of the smooth bore projectile. The spin rate computation mechanism 38 includes the timing mechanism 22 which is operatively connected to the counter 36 for determining the time for the smooth bore projectile to rotate a predetermined number of times.